

Applicant: Cheng-Liang Hou

Examiner: Jain, Raj K.

Serial No.: 10/694,732

Group Art Unit: 2651

Filed: October 29, 2003

Docket No.: 0063-115001/BU3130

Title: SYSTEM AND METHOD FOR VARIABLE DATA TRANSMISSION RATE RESOLUTION

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## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method, comprising:

storing a first plurality of data transmission rates in a register, wherein each of the first plurality of data transmission rates are spaced from each other by a first incremental value;

storing a second plurality of data transmission rates in a register, wherein each of the second plurality of data transmission rates are spaced from each other by a second incremental value greater than the first incremental value;

receiving a request to transmit data over a port of a switch at a requested transmission rate;

selecting one of the first plurality of data transmission rates or one of the second data transmission rates at which to transmit data over the port, wherein the selected transmission rate is based on the requested transmission rate ~~incrementing a port transmission rate using a variable resolution;~~ and

transmitting data through the port using the incremented selected port data transmission rate.

2. (Currently Amended) The method of claim 1, wherein the rates of the second plurality of data transmission rates are greater than the rates of the first plurality of data transmission rates ~~resolution is a function of the rate.~~

3. (Currently Amended) The method of claim 2, ~~wherein the resolution is inversely proportional to the rate~~ further comprising:

storing a third plurality of data transmission rates, wherein each of the third plurality of data transmission rates are spaced from each other by a third incremental value greater than the second incremental value;

selecting one of the first plurality of data transmission rates, one of the second data transmission rates, or one of the third plurality of data transmission rates at which to transmit data over the port, wherein the selected transmission rate is based on the requested transmission rate.

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4. (Currently Amended) The method of claim [[2]] 3, wherein the ~~resolution decreases exponentially as the rate increases~~ rates of the third plurality of data transmission rates are greater than the rates of the second plurality of data transmission rates.

5. (Cancelled)

6. (Currently Amended) The method of claim [[5]] 4, wherein the first incremental value resolution is 64 Kbps in a first range, the first incremental value is 1 Mbps in a second range, and the third incremental value is 8 Mbps in a third range.

7. (Currently Amended) The method of claim [[5]] 4, wherein a first ~~range ranges~~ plurality of data transmission rates includes rates from 0 Kbps to 2 Mbps, a second range ranges plurality of data transmission rates includes rates from 2 Mbps to 100 Mbps, and third range ranges plurality of data transmission rates includes rates from 100 Mbps to 1000 Mbps.

8. (Currently Amended) A data transmission rate control system, comprising:  
~~means for incrementing a port transmission rate using a variable resolution; and~~  
~~means for transmitting data through the port using the incremented port transmission rate~~  
means for storing a first plurality of data transmission rates, wherein each of the first  
plurality of data transmission rates are spaced from each other by a first incremental value;  
means for storing a second plurality of data transmission rates, wherein each of the  
second plurality of data transmission rates are spaced from each other by a second incremental  
value greater than the first incremental value;  
means for receiving a request to transmit data over a port of a switch at a requested  
transmission rate;  
means for selecting one of the first plurality of data transmission rates or one of the  
second data transmission rates at which to transmit data over the port, wherein the selected  
transmission rate is based on the requested transmission rate ~~incrementing a port transmission~~  
~~rate using a variable resolution; and~~

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means for transmitting data through the port using the incremented selected port data transmission rate..

9. (Currently Amended) A data transmission rate control system, comprising:  
registers configured for storing a first plurality of data transmission rates, wherein each of the first plurality of data transmission rates are spaced from each other by a first incremental value;  
registers configured for storing a second plurality of data transmission rates, wherein each of the second plurality of data transmission rates are spaced from each other by a second incremental value greater than the first incremental value;  
a receiving engine configured for receiving a request to transmit data over a port of a switch at a requested transmission rate;  
a rate setting engine configured to increment a port transmission rate using a variable resolution-select one of the first plurality of data transmission rates or one of the second data transmission rates at which to transmit data over the port, wherein the selected transmission rate is based on the requested transmission rate; and  
a transmission engine, communicatively coupled to the rate setting engine, the transmission engine configured to transmit data through the port using the incremented selected port data transmission rate.

10. (Currently Amended) The system of claim 9, wherein the rates of the second plurality of data transmission rates are greater than the rates of the first plurality of data transmission rates  
resolution is a function of the rate.

11. (Currently Amended) The system of claim 10, ~~wherein the resolution is inversely proportional to the rate~~ further comprising:  
registers configured for storing a third plurality of data transmission rates, wherein each of the third plurality of data transmission rates are spaced from each other by a third incremental value greater than the second incremental value; and

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wherein the rate setting engine is further configured to select one of the first plurality of data transmission rates, one of the second data transmission rates, or one of the third plurality of data transmission rates at which to transmit data over the port, wherein the selected transmission rate is based on the requested transmission rate.

12. (Currently Amended) The system of claim [[10]] 11, wherein the ~~resolution decreases exponentially as the rate increases~~ rates of the third plurality of data transmission rates are greater than the rates of the second plurality of data transmission rates.

13. (Cancelled)

14. (Currently Amended) The system of claim [[13]] 12, wherein the first incremental value resolution is 64 Kbps ~~in a first range, the first incremental value is 1 Mbps in a second range, and the third incremental value is 8 Mbps in a third range.~~

15. (Currently Amended) The system of claim [[13]] 12, wherein a first ~~range-ranges~~ plurality of data transmission rates includes rates from 0 Kbps to 2 Mbps, a second ~~range-ranges~~ plurality of data transmission rates includes rates from 2 Mbps to 100 Mbps, and third ~~range~~ ranges plurality of data transmission rates includes rates from 100 Mbps to 1000 Mbps.

16. (Currently Amended) A computer-readable medium having stored thereon instructions to cause a processor to execute a method, the method comprising:  
storing a first plurality of data transmission rates in a register, wherein each of the first plurality of data transmission rates are spaced from each other by a first incremental value;  
storing a second plurality of data transmission rates in a register, wherein each of the second plurality of data transmission rates are spaced from each other by a second incremental value greater than the first incremental value;  
receiving a request to transmit data over a port of a switch at a requested transmission rate;  
selecting one of the first plurality of data transmission rates or one of the second data

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transmission rates at which to transmit data over the port, wherein the selected transmission rate is based on the requested transmission rate incrementing a port transmission rate using a variable resolution; and

transmitting data through the port using the ~~incremented~~ selected port data transmission rate.

17. (Currently Amended) The computer-readable medium of claim 16, wherein the rates of the second plurality of data transmission rates are greater than the rates of the first plurality of data transmission rates resolution is a function of the rate.

18. (Currently Amended) The computer-readable medium of claim 17, ~~wherein the resolution is inversely proportional to the rate further comprising:~~

storing a third plurality of data transmission rates in a register, wherein each of the third plurality of data transmission rates are spaced from each other by a third incremental value greater than the second incremental value;

selecting one of the first plurality of data transmission rates, one of the second data transmission rates, or one of the third plurality of data transmission rates at which to transmit data over the port, wherein the selected transmission rate is based on the requested transmission rate.

19. (Currently Amended) The computer-readable medium of claim [[17]] 18, wherein the ~~resolution decreases exponentially as the rate increases~~ rates of the third plurality of data transmission rates are greater than the rates of the second plurality of data transmission rates.

20. (Cancelled)

21. (Currently Amended) The computer-readable medium of claim [[20]] 19, wherein the first incremental value resolution is 64 Kbps in a first range, the first incremental value is 1 Mbps in a second range, and the third incremental value is 8 Mbps in a third range.

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22. (Currently Amended) The computer-readable medium of claim [[20]] 19, wherein a first ~~range-ranges~~ plurality of data transmission rates includes rates from 0 Kbps to 2 Mbps, a second ~~range-ranges~~ plurality of data transmission rates includes rates from 2 Mbps to 100 Mbps, and third ~~range-ranges~~ plurality of data transmission rates includes rates from 100 Mbps to 1000 Mbps.